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A Need Analysis for Developing Arabic Phonetics: A Strategy for Mastering the Pronunciation of Arabic Letters

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ABSTRACT

Learning the pronunciation of hijaiyyah letters in the Quran is an important element in mastering the Arabic language. This study, therefore, aims to analyse the need for the development of the Aswat Knowledge Model. The method used is qualitative, which is the recording of the pronunciation of hijaiyyah letters by primary school students' in Petaling Jaya and the teachers' questionnaire. Recordings were analysed based on expert evaluation and PRAAT software. The findings of the study show that there are nine letters included in the medium category including ق, ع, ظ while the difficult category has five letters including ض, خ, ث. The general method of teaching is through talaqqi musyafahah and explanation. In general, specific teaching techniques related to places of articulation system (makhraj) and manner of articulation system (sifat hurf) are through different methods including the determination of articulation tools, sound methods such as vibration and wind, and so on. PRAAT analysis shows that the vowel pattern of the speaker's speech is closer to the Malay pattern than the Arabic pattern. The findings of the study show that there is a need to develop a model, which will focus on difficult sounds for Arabic language learners. To use the model effectively, other aspects such as assessing student abilities and choosing appropriate learning materials also need to be taken into account.

Keywords: Needs Analysis; Linguistic; Al Quran; Phonetic

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1.Introduction

Arabic is a very important field, especially when viewed from the point of view of teaching and learning a language. It really helps students to master al-Quran al-Karim which has the highest position in the life of Muslims. Arabic is one of the main languages in the world and is also the official language of Islam. The main sources of Islam are recorded in Arabic. Therefore, someone who wants to study Islam needs to learn Arabic. As one of the main languages of the world, this language is widely used everywhere as the language of knowledge, the language of diplomacy, the language of economics, the language of tourism and others. A person who is proficient in the Arabic language will benefit greatly to deal with the Arab world and fellow Muslims around the world [1].

Phonetics is the science that studies the sound system of language spoken by human speech. Phonetics is the science that studies linguistic sounds from the point of view of where the sound comes out, how to pronounce it and distinguish one sound from another because of its various properties. In the field of phonetics, the aspect of makhraj and the nature of letters affect the change and use of letters. In addition, pronunciation changes involving makhraj and attributes apply to certain letters. In the meantime, the character aspect of the letter overcomes the makhraj aspect in determining a form of change [1].

If observed the most important problem is that pronunciation errors in Arabic can have different meanings. This becomes more serious if this mistake is made in the reading when performing the prayer. Examples of errors such as the letters ص and س in the words سورة and صورة, as well as the letters ء and ع in the words علم and علم and some other letters. Mistakes will occur if the mistakes are not corrected at an early stage. This will not only lead to mistakes in prayer but will even affect the mastery of a third language. In addition, there are letters or sounds of the Arabic language that are different from the Malay language due to the places of articulation system (makhraj) and different manner of articulation systems (sifat hurf). This problem is due to the lack of consideration of the medium and difficult pronunciation of Arabic letters compared to Malay letters as well as the use of effective teaching techniques and tools. As Harun Baharuddin et al. [2] said, stated that the approach related to makhraj able to give students a clearer picture on how phonetics work and provide support for teachers to focus on makhraj, which has a higher difficulty level.

2. Literature Review

The use of models can also help teachers to improve students' achievements and skills. While the advantage for students, the model can help them to acquire knowledge, understanding and skills in the learning process more quickly and effectively. Sharifah Alwiah [3] outlines six uses of the module 1) regular teaching; i.e. teachers use the module for normal teaching done in class, 2) enrich teaching and learning materials; the module developed contains various methods and activities based on theories and approaches that help achieve the set objectives, 3) remedial teaching; modules can also be used to help weak students by providing additional modules that can be learned independently, 4) set the same abilities at the beginning level before starting a new learning. 5) teaching students who cannot attend due to unavoidable reasons and 6) planning courses by post or distance teaching using modules. While the importance of the module in the field of education can help teachers and students to achieve a teaching and learning objective in a planned, systematic and effective and fast way.

Rusydi Ahmad Tu'aimat [4] states that there are several recommendations for teachers who want to teach Arabic phonetics to non-native speaker students. This is a guide for all teachers and instructors who want to teach phonetics should follow this guide so that Arabic phonetics can be preserved. Among the guidelines is that teachers indirectly master the mother tongue system with Arabic such as different letters and letters with the same meaning and properties. This makes it easier to observe students' phonetics and use teaching aids (ABM) to further explain the teaching objectives without having to explain one by one. Apart from that, teachers and students should receive pronunciation practice with the help of al-Quran labs equipped with modern phonetics equipment [3].

Among the importance of PdP Arabic phonetics is to

set the best standard for the pronunciation of Arabic letters among Malaysians in general. According to Issraq [5], the ability to pronounce difficult letters found in a foreign language that are not found in the mother tongue is one of the most difficult language skills that students learn. This happens because this skill is closely related to the physiological aspect because it takes into account a person's speech tools that have been formed and become familiar with the pronunciation of their mother tongue since childhood. It is for this reason that students who learn a foreign language have problems using phonetic tools to pronounce letters that are not found in their language unless they have been studied comprehensively. Most students will pronounce difficult letters according to the articulation of the letters that is close to the articulation of the mother tongue. Knowledge of letter differences becomes increasingly important when the phonetic elements of the native language and foreign language are not the same and have many differences. Students who hear foreign words at the beginning of their learning will hear letters from their language only, in other words as if they were hearing a new word with letters that already exist in their language Mahjub [5]. Therefore, this study is to identify needs analysis through questionnaires, recordings of student utterances and teacher interviews. This study will analyze the needs of the Aswat Knowledge Model as a strategy for mastering the pronunciation of the Qur'an based on the recording of the student's letter pronunciation, expert evaluation of the student's recording and interviews of the teacher's views. For the recording of students' letter pronunciation, researchers who use a simple practical formula for the pronunciation of the 28 hijaiyyah letters from the Malaysian Al-Quran expert center. However, this study only focuses on medium and difficult letters since the category of easy letters does not need attention.

Although there are various methods of learning the Qur'an, researchers have found that the existing method does not categorize the hijaiyyah letters as easy, medium and difficult. Researchers found that only general methods were used, however each method had its own objective. Thus, in order to boost the learning of the Arabic language so that it is more effective, especially in mastering the pronunciation of hijaiyyah letters, this study will identify the need to analyze the need to create a new model arrangement of Arabic letters, which is the Aswat Knowledge Model based on pronunciation and easy-difficult letters in three groups, namely easy, medium and difficult through observing its pronunciation among primary school students in Selangor and based on Mahjub's Theory [6] which focuses on letters that are difficult for non-native Arabic speakers to pronounce. This is because the objective of the study is to enable speakers who learn Arabic to master difficult pronunciations compared to easy pronunciations and then be able to master the pronunciation of the Qur'an and at the same time be able to master Arabic as a second language.

3. Research Methodology

This study is a study to analyze the needs of the Aswat Knowledge Model that will be used by elementary students. This type of study emphasizes that the process of designing an instructional product is similar to the process of solving scientific problems. In addition to being able to deal with and solve a problem that arises, this study is also able to contribute to a field of knowledge (body of knowledge) because it is clearly based on literature studies, empirical studies, scientific in nature through the use of scientific methodology in conveying the researcher's understanding of the process that occurs in design and development studies. ADDIE is a systematic model that guides detailed teaching and learning practices for the development, assessment and maintenance of teaching and learning situations or teaching modules to achieve the desired learning objectives [7].

Therefore, in the context of this study, the researcher will design and build a new model using the ADDIE model [8] as a basis. The model building process through the ADDIE model will go through five stages, namely analysis, design, development, implementation and evaluation (Figure 1). Thus, these stages will be divided into three main phases namely Phase 1: Analysis, Phase 2: Design and Development and Phase 3: Implementation and Evaluation. For the first stage, this study will analyze the requirements carried out on teachers and students involving questionnaires and recordings.
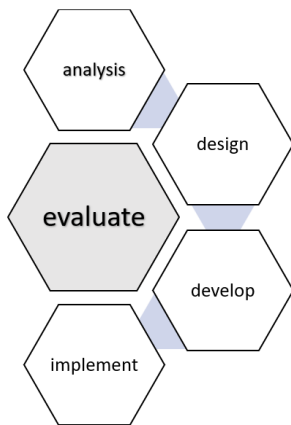
Figure 1. ADDIE Model Process.

A needs analysis was conducted on religious primary school students and al-Quran teachers with the aim of assessing their needs in developing the Aswat Knowledge Model. McKillip [9] also states that needs analysis is a value judgment for certain groups that have problems that need to be solved. This study is to produce the Aswat Knowledge Model as one of the strategies for mastering the pronunciation of hijaiyyah letters. The study respondents consisted of teachers who teach al-Quran subjects in the state of Selangor involving a school in Damansara. A total of 40 respondents were involved in recording the letters and three teachers in the questionnaire.

4. Data Collection

This study has two stages, the first stage; recording the pronunciation of hijaiyyah letters and the second level; a questionnaire to get teachers' views to support pronunciation recording data. For the first stage, the technique of recording the pronunciation of the 28 hijaiyyah letters was carried out on 40 students and a survey was conducted to identify the need for the construction of the Aswat Knowledge Model based on the views of three teachers. The recording of letter pronunciation is made in a special hall according to the turn of the respondents one by one. Next, the researchers recorded the pronunciation of hijaiyyah letters based on a simple practical formula for the pronunciation of 28 hijaiyyah letters from the Malaysian Al-Quran expert centre. Before the study began, the researcher had obtained consent from the school to collect data through the recording of students' letter pronunciation and

the school had given good cooperation so that this study could be carried out smoothly. The pronunciation data of primary school students in Petaling Jaya will be analyzed using PRAAT software.

For the second stage, research participants were given a set of research questionnaires to get feedback on the needs of the Aswat Knowledge Model. The questionnaire is divided into three parts, part A is the difficulty criterion for letter pronunciation. Part B is the general method of teaching which is talaqqi musyafahah, explanation, tikrar (repetition of letter reading) and memorization. Part C is a teaching technique from the point of view of makhraj and nature. Next for student recording, the researcher used a simple practical formula for the pronunciation of the 28 hijaiyyah letters from the Malaysian Al-Quran expert centre to record the students' pronunciation of the letters.

5. Data Analysis

The recording data obtained will be analysed by al-Quran experts or Qari for all hijaiyyah letters and PRAAT software experts. For recording student letter pronunciation, the evaluator will analyse letter by letter based on the 28 hijaiyyah letters using the following method [10] (**Table 1**).

Table 1. Criteria of Pronounce Level.

Scale	Pronunciation Level	Criteria of Pronounce Level
1	Accurate	The subjects of the study pronounced consonants that were tested accurately from the aspect of makhraj and sifat
2	Inaccurate	The study subjects pronounced the tested consonants less accurately. The pronunciation of the letter is correct from the aspect of makhraj but less than 3 from its sifat.
3	Very inaccurate	The pronunciation of consonants by the study subject is wrong from the aspect of makhraj and sifat

The recording and questionnaire data obtained will be analyzed through hijaiyyah letter categories based on easy, medium and difficult methods. This study uses Mahjub's Theory [9] which places nine difficult letters for non-Arabic speakers namely ح, خ, ص, ض, ط, ظ, ع, غ, ق. In addition to the nine letters mentioned above, Mahjub

added ra' (ر) and lam (ل) which is also an analysis of the research done showing that these two consonant letters also cause problems in student pronunciation. This problem arises from the articulation system (sifat hurf) of tafkhim (thick) and tarqiq (thin). However, the mistake of these two consonant letters does not affect the meaning compared to other consonant letters. The first letter placed in this model is the letter qaf (ق) then the letter kha'. (ظ). While the letters 'ayn (ع) and ha' (ح) are placed at the end because of the difficulty. While ghayn (غ) is placed at the very end because it is less used than other letters.

Acoustic Measurement of Sound

This section displays an example of the procedure of segmentation and measurement of the acoustic volume of vowels /a, i, u/ which is Vowel Duration (ms) & Formant Frequency (Hz). The speech segmentation method and value acquisition for each acoustic measurement is based on wave signal data analysis and spectrogram. In general, this measurement is done by positioning both indicators in the computerized display of wave signals and spectrograms for each study sample. The beginning and end of each sound studied is obtained/set through the use of wave signals and speech spectrograms of research data. Acoustic analysis of the target vowel involves measuring the vowel duration (VD) and frequency quality of the first formant (F1), second formant (F2) and third formant (F3). See the following diagram (**Figure 2**).
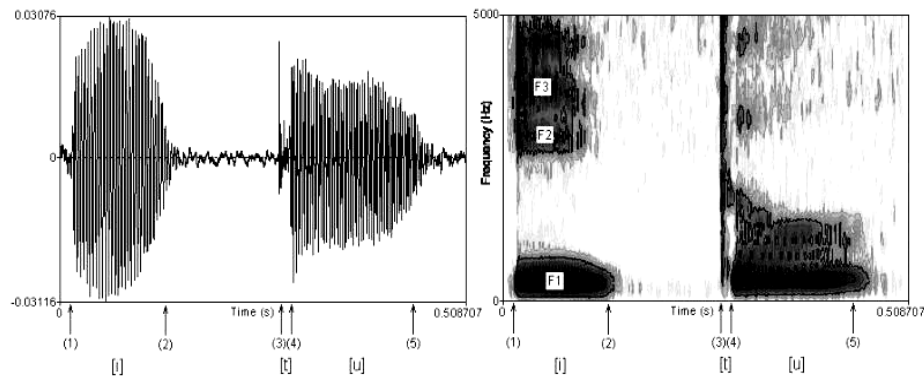

Figure 2. Measurement of target acoustic power based on an example speech spectrogram [itu] 'that'.

Figure 2 above shows the presence of arrows 1 and 2 which are respectively referred to as markers of the beginning and end of the vowel wave [i] (vowel duration) in the utterance [itu] while arrows 3 and 4 are referred to as markers of the beginning and end of the sound wave plosive [t]. Arrows 4 and 5 respectively are also referred to as marking the start and end of the vowel wave [u] in the utterance [it]. F1, F2, and F3 in figure 2 above are respectively referred to as the first, second and third formant frequencies of the vowel [i] in the utterance [it] (vowel frequency quality). This study, therefore, identifies the quality (forman-forman frequency) and vowel duration /a, i, u/ based on the data shown acoustically (through waveform and spectrogram signal displays).

To obtain the value of each formant (F1, F2 and F3), the formant function is selected in the PRAAT menu option and the cursor is placed at the midpoint. Then, click on the formant tab and press the left mouse button once on the 'Formant Listing' tab to see the Hz reading values [11].

6. Findings

Based on the objectives of the first-level needs analysis, the analysis of recorded data is based on two evaluations, which are evaluations from experts and evaluations using PRAAT software. The first stage divides hijaiyyah letters into three categories which are easy, medium and difficult as shown in **Table 2** below;

Table 2. Pronunciation Level Difficulty Category Based on Recording Expert Evaluator and Teacher's View.

Category	Letter
Easy	ا / ب/ ت / ج / د / س / ف / ك / ل / م / ن / ه / و / ي / لا
Medium	ح / ر / ز / ش / ص / ط / ظ / ع / ق
Difficult	ث / خ / ذ / ض / غ

Based on the difficulty criteria of the pronunciation level, the researchers divided into three categories as in Table 2, namely easy, medium and difficult. For the construction of this model, the researcher focused on the medium and difficult categories since the medium category does not need to have a solution to it. Thus, based on the analysis of recorded data by expert assessors and questionnaires from teachers, there are nine letters included in the easy category namely ح, ر, ز, ش, ص, ط, ظ, ع, ق while the difficult category has five letters namely خ, ذ, ض, غ, ث. Letters that are included in the difficult category are included in the isti'la' letter category. Next, for the technique of teaching makhraj letters, the researcher focused on three medium letters namely ع, ق, ظ and three difficult letters namely خ, ث, ض.

As indicated earlier, for the analysis of the PRAAT software, it will evaluate the formant frequency and vowel duration of the Arabic language. The specific utterances containing the targeted sounds (i.e. vowel /a, i, u/) were segmentized as shown below **Figures 3–5**:
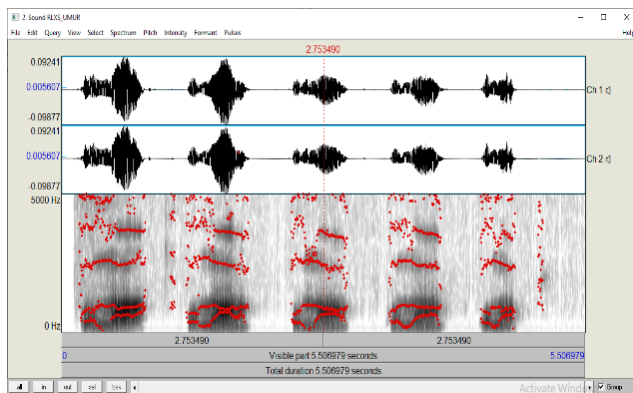

Figure 3. Examples of sound signals and spectrograms based on display in PRAAT.
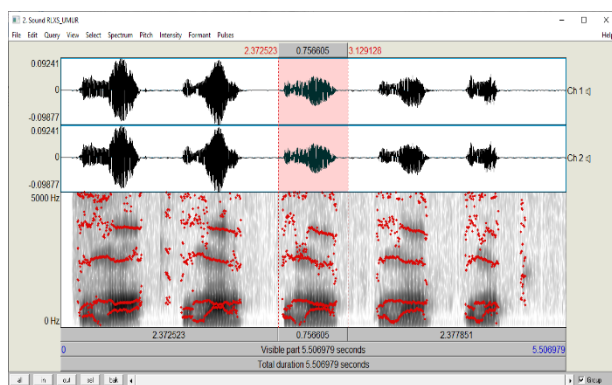

Figure 4. Example of Word Segment Fragmentation.
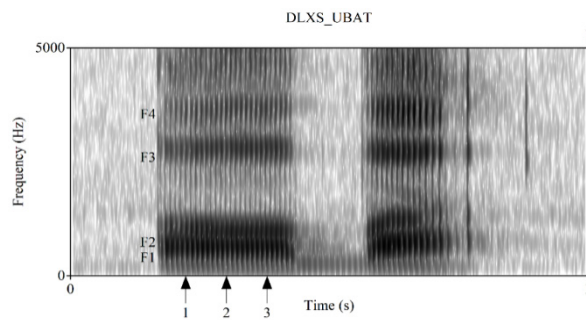

Figure 5. An example of the vowel formant frequency (FI, F2, F3 & F4) in the speech spectrogram.

The frequency reading of all formants in this study is obtained by placing the cursor on point 2 (arrow 2). Arrows 1, 2 and 3 in the diagram above are the approximate points of 20%, 50% and 80% of the beginning of the formant region. The selection of point 2 is because 50% of the formant region is a clear and stable point to place the onset and offset frequency.

Table 3. Formant Frequency Values and Vowel Duration in Arabic.

Target segment	Acoustic Amplifier (Forman Frequency Value & Vowel Duration)	Arabic Language-Malay	Malay	Arabic Language
a	F1 (Hz)	840	800	650
	F2(Hz)	1400	1250	1200
	VD (ms)	230	200	300
i	F1 (Hz)	600	380	290
	F2(Hz)	2000	2400	2200
	VD (ms)	200	150	300
u	F1 (Hz)	650	400	290
	F2(Hz)	1400	1100	800
	VD (ms)	240	200	300

Table 3 shows the display of the average values of Formant Frequency & Vowel Duration of the Arabic language spoken by 10 native Malay speaking subjects and its comparison with the vocabulary of previous studies related to the Malay and Arabic languages. The findings of the study show that the vowel pattern of the speaker's speech is closer to the pattern of Malay than Arabic. The findings of the study, therefore, highlight some significant issues especially related to second language learning by non-native speakers. It covers:

i. The phenomenon of the influence of the first language (B1) on the second language (B2) (mother-tongue interference) [12];

ii.The phenomenon of 'interlanguage' [13]

iii.The phenomenon of exaggeration in phonetic adaptation between B1-B2 (exaggerated) [14]

For the second stage, the questionnaire items are divided into three parts which are part A; pronunciation level difficulty criteria (as explained in the first level section), part B; general methods of teaching which are talaqqi musyafahah, explanation, tikrar which is repetition of letter reading, memorization while part C; teaching techniques from the point of view of makhraj and properties for medium and difficult letters. For the needs analysis of the questionnaire with the teachers, the researcher selected three teachers who were directly involved in this study and had a special educational background in the field of al-Quran or tahfiz al-Quran and taught the entire subject of al-Quran. All the teachers involved are experienced in teaching the students who are the sample of the study.

Table 4. General Teaching Methods.

Methods	Teaching
Talaqqi musyafahah	Using youtube videos and face-to-face reading with the teacher
Explanation	Explanation using textbooks and videos
Repetition or memorization	The process of repeating the reading for correct pronunciation

Based on **Table 4**, there are three methods that are fully used by the Quran teachers. The first is to use the talaqqi musyafahah method, which is that the teacher teaches using a video through the YouTube platform on the front screen of the class, such as showing a diagram of the letter makhraj. Then the teacher explains how to pronounce the letter correctly through a video. After showing the video, the students are required to pronounce hijaiyyah letters one by one to ensure that the letters are pronounced correctly or not.

Next is the second method of explanation. For this method, teachers use textbooks and show videos to students to explain the process of pronouncing letters correctly, especially students in year one, two and three because most of the students do not pronounce hijaiyyah letters correctly. The last is the method of repetition or memorization. The teacher uses the memorization method more because he stated that memorization is a method that is comfortable for students to use when teaching because memorization is considered a repeating process. For the first time, students will usually make mistakes in the pronunciation of letters when reciting the Qur'an, but if it is repeated several times and corrected by the teacher, then the pronunciation of the reading will be accurate and clear.

For the technique part of teaching makhraj letters, the researcher focused on three medium letters namely ظ ,ق ,ع and three difficult letters namely ض ,ث ,خ (**Tables 5–10**).

Table 5. Techniques for Teaching the Place of Articulation System (makhraj) and the Manner of Articulation System (sifat hurf) for the Category of Medium Letters (ظ).

Makhraj	Sifat
• The movements of the teacher's mouth and tongue are then followed by the students.	Jahr (clear) • sounds without completely releasing air from the lips or holding back the pronunciation of letters and not releasing air/breath Rakhāwah (gentle) • soften the pronunciation when saying this letter Isti'lā' (raised) • raise the tongue to the palate or raise part of the base of the tongue to the palate and press the letters a little harder Iṭbāq (sticking) • pouting both lips and tongue pressing the tip of the teeth and lifting the tongue to the palate as if closing the air space and not pronouncing the letter thickly and closed when pronouncing this letter Iṣmāt (withhold) • open the lips and slightly press the tongue and do not utter the letter when saying it

Table 6. Techniques for Teaching the Place of Articulation System (makhraj) and the manner of articulation System (sifat hurf) for the Category of Medium Letters (ح).

Makhraj	Sifat
• exhale after saying the letter. • take out the palm and place it in front of the mouth while saying the letter	Jahr (clear) • sounds without completely releasing air from the lips or holding back the pronunciation of letters and not releasing air/breath • take out the palm and place it in front of the lips, When the letter is said, the student will feel the wind/air that is blocked or not completely released Rakhāwah (gentle) • soften the pronunciation when saying this letter Istifāl (humble) • the tongue presses the tip of the teeth and does not lift the tongue. When combining the letter with the letter mad, then the letter does not need to be stressedkepada tekanan Infitāḥ (open or stretched) • opening the lips slightly when saying letters • opens the air space between the tongue and palate Iṣmāt (withhold) • open the lips and slightly press the tongue and do not utter the letters when saying them

Table 7. Techniques for Teaching the Place of Articulation System (makhraj) and the manner of articulation System (sifat hurf) for the Category of Medium Letters (ق).

Makhraj	Sifat
• pictures of makhraj and mouth movements.	Jahr (clear) • sounds without completely releasing air from the lips or holding back the pronunciation of letters and not releasing air/breath • take out the palm and place it in front of the lips, When the letter is said, the student will feel the wind/air that is blocked or not completely released Shiddah (Strong) • press the tip of the tongue/lips when saying the letter shiddah • press the letter to become bold and make a little pressure on the letter that is mentioned Isti'lā' (raised) • raise the tongue to the palate or raise part of the base of the tongue to the palate and press the letters a little harder Infitāḥ (open) • opening the lips slightly when saying letters • opens the air space between the tongue and palate Iṣmāt (withhold) • open the lips and slightly press the tongue and do not utter the letter when saying it Qalqalah (reflection) • The teacher explains that the letters produce letter bounces and sounds

Table 8. Techniques for Teaching the Place of Articulation System (makhraj) and the manner of articulation System (sifat hurf) for the Category of Difficult Letters (خ).

Makhraj	Sifat
• movement of the teacher's mouth and holding the throat; sounds like someone snoring	Rakhawah (soft) • Remove the palm and place it in front of the lips and feel the wind/air coming out of the mouth • Produces wind that doesn't get stuck after saying it • soften the pronunciation when saying this letter Isti'lā' (raised) • raise the tongue to the palate or raise part of the base of the tongue to the palate and press the letters a little harder Infitāḥ (open) • opening the lips slightly when saying letters • opens the air space between the tongue and palate Iṣmāt (wihhold) • open the lips and slightly press the tongue and do not utter the letters when saying them

Table 9. Techniques for Teaching the Place of Articulation System (makhraj) and the manner of articulation System (sifat hurf) for the Category of Difficult Letters (ث).

Makhraj	Sifat
• lip movement when saying the letter.	Hams (hide/silent) • Produces wind that doesn't get stuck after saying it Istifāl (humble) • Remove the palm and place it in front of the lips and feel the wind/air combine the letter with the letter mad, then the letter does not need to be pressured Itbāq (sticking) • opening the lips slightly when saying letters • opens the air space between the tongue and palate Iṣmāt (withhold) • open the lips and slightly press the tongue and do not utter the letter when saying it

Table 10. The Techniques of Teaching the Place of Articulation System (makhraj) and the Manner of Articulation System (sifat hurf) for the Category of Difficult Letters (ض).

Makhraj	Sifat
The movements of the teacher's mouth and tongue are then followed by the students	Jahr (clear) • sounds without completely releasing air from the lips or holding back the pronunciation of letters and not releasing air/breath • take out the palm and place it in front of the lips, When the letter is said, the student will feel the wind/air that is blocked or not completely released Rakhāwah (gentle) • soften the pronunciation when saying this letter Isti'lā' (raised) • raise the tongue to the palate or raise part of the base of the tongue to the palate and press the letters a little harder Iṭbāq (sticking) • pouting both lips and tongue pressing the tip of the teeth and lifting the tongue to the palate as if closing the air space and not pronouncing the letter thickly and closed when pronouncing this letter Iṣmāt (withhold) • open the lips and slightly press the tongue and do not utter the letters when saying them Istiṭālah (lengthening) • lift the tongue to the side while making out the letters and press the tongue to the upper teeth

7.Discussion

The study shows that there are nine letters included in the medium category including ظ, ع, ق while the difficult category has five letters including ث, خ, ض. The general method of teaching is through talaqqi musyafahah and explanation. In general, specific teaching techniques related to places of articulation system (makhraj) and manner of articulation system (sifat hurf) are through different methods including the determination of articulation tools, sound methods such as vibration and wind, and so on. For the PRAAT analysis, it is shows that the vowel pattern of the speaker's speech is closer to the Malay pattern than the Arabic pattern. Overall, the techniques of teaching the place of articulation system (makhraj) of the letters ث، خ، ظ، ع،ق and ض involves moving the mouth and tongue,

blowing wind after saying certain letters, using pictures of the place of articulation system (makhraj) and mouth movements, holding the throat and making sounds like a person snoring and lip movement when saying certain letters. It was found that the character of the letter includes jahr, rakhāwah, isti'lā', iṭbāq, iṣmāt, istifāl, infitāḥ, shiddah, qalqalah, hams, and istiṭālah. Based on the division of letters that involve medium and difficult categories, the specific teaching technique for the articulation system (sifat hurf) of the three hijaiyyah letters of the medium category, namely ظ, ع, ق, involves jahr, rakhāwah, isti'lā', iṭbāq, iṣmāt, shiddah, infitāḥ and qalqalah. In addition, the specific teaching technique for the articulation system (sifat hurf) of the three hijaiyyah letters in the difficult category, namely خ, ث, ض, involves jahr, rakhāwah, isti'lā', iṭbāq, iṣmāt, hams, istiṭālah, infitāḥ and qalqalah. Each of

these properties explains the specific hijaiyyah letters that can distinguish each pronunciation according to a certain pronunciation. Therefore, it is very important to master the pronunciation of hijaiyyah because it is the main component in learning Arabic and without correct pronunciation, the students will not be able to master the third language which is Arabic language fluently.

8. Conclusions

In conclusion, the results of the study shows that the findings of the study based on the evaluation of experts on student recordings and teachers' views show that there are nine letters included in the easy category namely ق, ع ,ظ ,ط ,ص ,ش ,ز ,ر ,ح while the difficult category has five letters namely غ ,ض ,ذ ,خ ,ث. Among the general teaching techniques that are focused on is the showing of a video in class about letter makhraj while the special makhraj technique is the movement of the teacher's mouth and tongue followed by the students. Next, the specific teaching techniques for the articulation system (sifat hurf) of the three hijaiyyah letters of the medium category namely ق ,ع ,ظ involve jahr, rakhāwah, isti'lā', iṭbāq, iṣmāt, shiddah, infitāḥ and qalqalah. In addition, the specific teaching technique for the articulation system (sifat hurf) of the three hijaiyyah letters in the difficult category, namely ض, ث ,خ, involves jahr, rakhāwah, isti'lā', iṭbāq, iṣmāt, hams, istiṭālah, infitāḥ and qalqalah. Meanwhile, the general method of teaching involves three methods namely talaqqi musyafahah, explanation and tikrar (repetition) or memorization. For the talaqqi musyafahah method, teaching is using videos and the YouTube platform as well as face-to-face reading with the teacher. The explanation method is that the teacher uses textbooks and videos during teaching and learning sessions. Next, for the method of repetition or memorization, the teacher repeats the reading for the correct pronunciation and asks the students to follow the pronunciation correctly.

Next, the final assessment is the PRAAT software showing that the speaker's speech patterns are closer to Malay than Arabic. This is based on the value of the formant frequency and vowel duration of Arabic spoken by native Malay speakers. The findings of the study show that there is a need to develop an Aswat Knowledge Model based on the teaching and learning activities of the Qur'an based on the difficulty level of the letters through recording the student's pronunciation of the letters and the views of experienced teachers. The implications of the study concluded that the Aswat Knowledge Model is one of the important components in teaching the pronunciation of hijaiyyah letters to ensure that students can master the pronunciation of Arabic letters, especially medium and difficult letters more effectively. Mastering the pronunciation of Arabic letters is very important in Arabic phonetics so that students can master the third language, which is Arabic. Therefore, it is hoped that this study can provide an initial overview of the need to develop an effective Aswat Knowledge Model so that it can be practiced in the teaching and learning process of the Qur'an, especially the pronunciation of hijaiyyah letters.

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The authors confirm that all data generated and ana-

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Conflicts of Interest

The authors declare no conflict of interest.

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